

of the *Diplodonta*-siphon might be important. It certainly *was* important, for the information I found in Dall's words (1901, p. 795) is as follows: "There are two entire siphonal orifices, without siphons." Where there are no siphons, no siphonal coverings are needed; thus the explanation of the nest extensions as siphonal tubes is entirely baseless.

In all the cases which came to my observation, the *Diplodonta*-covering seems to consist of two halves corresponding to the two valves of the shell, opening at the ventral side and united at the dorsal side of the animal. Nothing is known as yet of the way in which *Diplodonta orbella* constructs its two kinds of coverings, though it ought not be too difficult to watch its construction in an aquarium. It is hoped that my paper may stimulate some West Coast malacologist to study this interesting problem.

I mentioned above that the myid bivalve *Cooperella subdiaphana* Carpenter also has the habit of constructing a protective covering. I have not found one myself, but I saw specimens both in the Los Angeles Museum and in the Stanford University Collection. To the best of my knowledge, Keen and Frizzell (1935, p. 23) are the first to mention the *Cooperella*-covering, describing it as a "nest of agglutinated sand"; but no picture of the object has ever been published. The dried covering is rather solid; it is closed all around, leaving only a slit on the posterior extremity open for the communication of the inmate with the outer world.

COLLECTING IN MEXICO

By A. SORENSEN

On my three trips to Guaymas, Mexico, for the purpose of studying and collecting specimens of the wonderfully ample marine life there I made a number of observations, which may be worth recording. As a collecting place of marine life Guaymas can hardly be excelled for it has all the different kinds of shore fronts from sandy beaches to rocky stretches and offshore islands. Besides these the Miramar Lagoon, San Carlos Bay, Estero Soldado and San Ramon Bay furnish, at low tides, sand spits, mud flats and large sand bars, all easily accessible by auto.

The gastropods here vary in size from the minute *Olivella dama* to the 12 to 13 inch *Fasiolaria princeps*, and hundreds of other species between in size. The sandbars are so well stocked with many species of bivalves that they furnish ample food for the multitude of gastropods that feed on them, as well as making excellent clam chowder for persons that will dig them.

One thing readily noticed as one visits this district at different times of the year is the preponderance of one species; say during January, of another more prominent during February and March and still another in the warmer month of May. These have been my only months of visit for after that it gets too hot for comfort. For instance: in February 1940 there were many *Strombus gracilior* washed up on the sandy beach at Miramar. In May 1941 there were none to be found anywhere and dredging in from five to ten fathoms brought only a few; they had, no doubt, retreated to deeper and cooler water. In January 1942 they were on the beach and on the sandbars literally by the thousands.

That is only one of many similar cases. In May 1941 the *Murex bicolor*, the white murex that is so beautifully rose-colored inside, was so plentiful in 10 to 12 feet of water that a common hoop crab-net set from the boat-wharf and baited with a dead fish enticed more than fifty in one night into the trap. What a scent they must have. This year in January there were few, if any, off shore, but the sand bars in the bays and lagoons were alive with them. Here they dig down in the sand and travel below the surface until they find a clam which they generally bring up. If the clam does not open soon enough to suit them they chip the lips of both valves enough to make a small opening and then suck them out. Many instances were observed of this actually being done.

In most cases they preferred a waiting game. Often two murices, generally *Murex nigritus*, the black one, had hold of one clam, one on each side firmly attached by suction. At times other hungry ones were attracted and I have twice counted five murices all attempting to have a taste of one clam, and that while the clam was still closed and alive.

While the murices depend on waiting or on chipping their

prey, the polinices and naticas depend on drilling a hole in one of the valves, generally near the hinge. I could go on giving examples of variation of the fauna present at different times, but I will just mention one more, *Turritella goniostoma*. In February and May of previous visits they were almost non-existent there except for the empty shells many of which had drilled holes showing their fate, but this year in January, in San Carlos Bay, they were spawning, and from a dozen up would be crawling in a limited space. They deposit a gelatinous string a half inch in diameter and more than twelve inches long, throughout which the large eggs show plainly.

There is no doubt that mollusks, like fishes, migrate to their spawning grounds, thus accounting for their absence or abundance at various seasons. But this is not always understood by amateur collectors who often complain about their lack of luck.

Much could also be said about the ecology of the different species. Some dwell on the sea floor, some on or among the rocks, and some in the sand. But that would be another story.

OBSERVATIONS UPON A FLORIDA FORM OF VIVIPARUS

By CALVIN GOODRICH

Mr. T. Van Hyning of the Florida State Museum recently sent me *Viviparus georgianus* form *walkeri* (Pilsbry and Johnson), containing soft parts, that had been taken in Sante Fe River, Alachua County, Florida, on May 22, 1941. It was a simple matter to separate the sexes—in the case of females mostly by the presence of ova and embryos, in that of the males by the tentacles, one of which is a generative organ. The sending was made up of 447 specimens. The females numbered 358, the males 89. This is almost exactly four females to one male, or put another way, 80.0 per cent females and 19.9 per cent males.

In the course of a detailed study of *V. bengalensis* (Lamarek), Annandale and Sewell (1921) found that the sexes of a single year's brood were "roughly" four females and one male. A report upon *V. crassus* (Hutton) from which these authors quote